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Peng Zhou

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EXAMINER

BENGZON, GREG C

ART UNIT

PAPER NUMBER

2444

NOTIFICATION DATE

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/502,543	Applicant(s) ZHOU ET AL.	
	Examiner GREG BENZON	Art Unit 2444	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-9,11-18 is/are rejected.
- 7) ☒ Claim(s) 4 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application has been examined. Claims 1-18 are pending. Claim 18 is submitted as a new claim.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/04/2009 has been entered.

Response to Arguments

Applicant's arguments filed 06/04/2009 have been fully considered but they are not persuasive.

The Applicant presents the following argument(s) [*in italics*]:

[The prior art does not disclose]... *Client-server structure by which the authentication server authenticates identification of the host to join in a multicast group with information inputted through the interface provided by the portal server" (emphasis*

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added)...¶ [0083] of Fukutomi teaches that... the authentication was based on the transmission end address and the group address...Furthermore, based on ¶¶ [0042] and [0130] of Fukutomi, the transmission end address was the IP address of the host. Thus, it can be seen that in Fukutomi, a user was authenticated based on the IP address of the host and the group message, instead of being authenticated based on the identification, e.g., the ID, of the host as in claim 1 of the application.

The Examiner respectfully disagrees with the Applicant.

In Fukutomi the IP address of the host is a form of identification ID for the host. Thus Fukutomi disclosed wherein a server authenticates identification of the host to join in a multicast group.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *wherein the host ID is not the IP address of the host*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

The Applicant presents the following argument(s) *[in italics]*:

[in Fukutomi] ... the CE router is different from the Ethernet switch as known by the skilled person in the art ...the CE router in Fukutomi fail to disclose or teach the Ethernet switch in claims 1 and 7 of the application....A person of ordinary skill in the art

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would understand that there is no IP address for each port in the Ethernet switch, e.g., a generalized switch in the art. If using the Ethernet switch as a substitute for the CE router in Fukutomi, the Ethernet switch in Fukutomi cannot work. For example, the IGMP Proxy processing section 22c cannot act in the Ethernet switch at all. Thus, such a change would render Fukutomi unsatisfactory for its intended purpose, in violation of M.P.E.P. § 2143.01(V). In view of above, it can be seen that the claimed Ethernet switch is not disclosed or taught by the CE router in Fukutomi.

The Examiner respectfully disagrees with the Applicant.

The Applicant remarks differentiate the CE router from an Ethernet switch by describing the functions of the IGMP Proxy processing section.

However Fukutomi disclosed a CE router having a LAN interface in combination with said IGMP Proxy processing section and packet relay processing section that is equivalent to the Ethernet switch in the claimed invention. Fukutomi Paragraph 106 describes wherein the CE router performs a relay operation between the user PC and PE router ('*multicast router*'). Thus the Fukutomi CE router having a LAN interface in combination with said IGMP Proxy processing section and packet relay processing section is enabled to function as required by the claimed invention for forwarding multicast packets while adapting to the IGMP protocol.

The Examiner notes that while Fukutomi describes an embodiment wherein the CE router is connected to one host Fukutomi is not limited to this embodiment.

The Applicant presents the following argument(s) *[in italics]*:

... Fukutomi, Haggerty and Dobbins are not analogous art, and it would have been unobvious to a person of ordinary skill in the networking art to combine Haggerty and Dobbins into Fukutomi.

The Examiner respectfully disagrees with the Applicant.

Fukutomi, Haggerty-Dobbins are analogous art because they present concepts and practices regarding secure multicasting using IGMP. At the time of the invention it would have been obvious to a person of ordinary skill in the networking art to combine Haggerty-Dobbins into Fukutomi. The motivation for said combination would have been to enable multicasting to VLANs. (Haggerty-Column 25 Lines 45-60).

The Applicant presents the following argument(s) *[in italics]*:

...Fukutomi not only fails to disclose that the multicast router records a User ID, but also obviously fails to disclose that the multicast router records a vlan ID corresponding to the User ID of the authenticated host.

The Examiner respectfully disagrees with the Applicant.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.

While Fukutomi substantially disclosed the claimed invention Fukutomi is not relied upon to disclose recording a vlan ID corresponding the User ID of the authenticated host.

Haggerty-Dobbins disclosed a multicast system implemented using IGMP messaging. (Haggerty-Column 4 Lines 55-65) Furthermore Dobbins disclosed a multicast forwarding table implemented in a VLAN Ethernet switch such that multicast packets are sent only to ports defined for a particular VLAN. (Dobbins-Column 2 Lines 50-65)

Haggerty-Dobbins disclosed (re. Claim 1) recording a corresponding vlan ID of the authenticated host. (Haggerty-Column 25 Lines 45-65, Dobbins-Column 7 Lines 20-40).

The Examiner notes that where a VLAN Ethernet switch has VLAN Ids assigned for the ports defined for that VLAN, and Fukutomi disclosed User ID's for each user on the VLAN Ethernet switch, it would have been obvious to a person of ordinary skill in the art to correlate the User Ids and VLAN Ids since they are well-known attributes that are used to describe users and user devices.

The Applicant presents the following argument(s) *[in italics]*:

... Dobbins and Haggerty disclose an End System/VLAN table established in each switch in a switched network rather than the multicast router as claimed in the amended claim 1 of the present invention.

The Examiner respectfully disagrees with the Applicant.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.

Haggerty-Dobbins is not relied upon to disclose a multicast router.

Fukutomi disclosed a multicast router as embodied by the PE router.

The Applicant presents the following argument(s) *[in italics]*:

...Moreover, from ¶¶ [0127]-[0132] of Fukutomi and Haggerty, Col. 8, ln. 15-25, Figure 17, Applicants only finds a "join group message" therein. Besides, taking

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arguments above regarding Haggerty into consideration, it can be seen that the "join group message" is sent by the local switch to other switches, which is used to ask for data of a multicast session a host wishes to participate....However, based on the above features of claims 1 and 7, it can be seen that the control command is sent from the multicast router to the Ethernet switch, which is used to control multicast forwarding operations of the Ethernet switch...Thus, it can be seen that neither the sender nor the functions of the "join group message" in Haggerty is equivalent to that of the control command in claim 1 of the application. The Applicants respectfully submits that the "join group message" is not equivalent to the control command.

The Examiner respectfully disagrees with the Applicant.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., 'wherein the control command is not a join group message') are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The Examiner interprets 'control commands' as multicast commands that result in a user device receiving a multicast stream. Furthermore the join group message is

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equivalent to a control command because the join message necessitates a response and resulting multicast session with the user device.

Fukutomi Paragraph 127-132 disclosed wherein the PE router ('*multicast switch*') determines that a user PC is authenticated to receive a multicast. Where the PE router allows a user PC to receive a multicast then the PE router would have been required to send a multicast JOIN command or its equivalent to the CE router ('*Ethernet switch*') in order for said user PC to receive the multicast stream as disclosed by Haggerty-Column 8 Lines 15-25, Figure 17.

Thus Fukutomi-Haggerty disclosed *distributing control commands according to results of the authentication to control multicast forwarding operations of the Ethernet switch.*

The Applicant presents the following argument(s) [*in italics*]:

...the multicast router in claim 1, and the method of claim 7 cannot be disclosed or taught by the PE router in Fukutomi.

The Examiner respectfully disagrees with the Applicant.

The PE router by Fukutomi is sending control commands to the CE router, and thus the PE router is equivalent to the multicast router in the claimed invention.

Priority

This application claims benefits of priority from Foreign Application 02100445.5 filed 01/30/2002 (CHINA).

The effective date of the claims described in this application is January 30, 2002.

Claim Objections

Claims 4,10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and all of the limitations in any intervening claims.

The Applicant is respectfully requested to review the scope of the claims in order to have claims that are parallel in scope.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3,5-9,11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukutomi (US Publication 2002/0091926) in view of Haggerty (US Patent 6331983) further in view of Dobbins (US Patent 5684800) as incorporated by reference in Haggerty.

The Examiner notes that the invention is directed towards maintaining a table of VLAN ports authorized to receive multicast packets.

Fukutomi disclosed wherein a multicast stream in a multicast group is only transmitted to the user of the receiver host connected to a predetermined port and/or receiver IP address. Fukutomi authenticates the receiver host more accurately while the function of the receiver host remains as it is, thereby to prevent a participation-unaccepted user from receiving this multicast stream.

Fukutomi Figure 16 disclosed a mapping table for user ID, receiver host IP address and the receiver port number.

Fukutomi disclosed (re. Claim 1) a controlled multicast system, including an Ethernet switch (Fukutomi-Figure 9, '*CE router*') and a multicast router (Fukutomi-Figure 9, '*PE router*'), where the Ethernet switch connects with each host in a downlink, connects with the multicast router in an uplink, the multicast router connects with a multicast router of other systems in the uplink, the Ethernet switch implementing multicast exchange of a layer 2, an IGMP V2 protocol is adopted as group management

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protocol between the Ethernet switch (Fukutomi-Paragraph 107, '*IGMP Processing section*') and the host of the user; wherein the controlled multicast system further comprises:

a portal server, connecting with the multicast router and providing an interface of user access authentication; and (Fukutomi-Figure 9, '*delivery accept server*')

an authentication server, storing configuration of privilege for the host which wants to join in the multicast group; (Fukutomi-Figure 9, '*authentication server*')

the multicast router (Fukutomi-Figure 9, '*PE router*') and the authentication server adopting a Client-server structure by which the authentication server authenticates (Fukutomi-Figure 20, Paragraph 48, '*authenticating based on the port of the PE router*') identification of the host to join in a multicast group with information inputted through the interface provided by the portal server, and the multicast router records a User ID and a corresponding router (Fukutomi-Figure 11, Figure 16, Paragraph 80-84, Paragraph 70) and then distributes control commands according to results of the authentication to control multicast forwarding operations of the Ethernet switch. (Fukutomi-Figure 9, '*CE router*')

The Examiner notes that Fukutomi Figure 16 enables the authentication of the receiver based on any of the attributes listed on the table.

The Examiner interprets '*control commands*' as multicast commands that result in a user device receiving a multicast stream. Furthermore the join group message is

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equivalent to a control command because the join message necessitates a response and resulting multicast session with the user device.

Fukutomi Paragraph 127-132 disclosed wherein the PE router (*'multicast switch'*) determines that a user PC is authenticated to receive a multicast. Where the PE router allows a user PC to receive a multicast then the PE router would have been required to send a multicast JOIN command or its equivalent to the CE router (*'Ethernet switch'*) in order for said user PC to receive the multicast stream

While Fukutomi substantially disclosed the claimed invention Fukutomi did not disclose (re. Claim 1) recording a corresponding vlan ID of the authenticated host.

The Examiner notes that since Fukutomi was concerned with multicasting to LAN devices Fukutomi would have been motivated to seek disclosures regarding multicasting to other varieties of LAN connections, including VLAN networks.

Haggerty-Dobbins disclosed a multicast system implemented using IGMP messaging. (Haggerty-Column 4 Lines 55-65) Furthermore Dobbins disclosed a multicast forwarding table implemented in a VLAN Ethernet switch such that multicast packets are sent only to ports defined for a particular VLAN. (Dobbins-Column 2 Lines 50-65, Column 3 Lines 15-25)

Haggerty-Dobbins disclosed (re. Claim 1) recording a corresponding vlan ID of the authenticated host. (Haggerty-Column 25 Lines 45-65, Dobbins-Column 7 Lines 20-40).

The Examiner notes that where a VLAN Ethernet switch has VLAN Ids assigned for the ports defined for that VLAN, and Fukutomi disclosed User ID's for each user on the LAN Ethernet switch, it would have been obvious to a person of ordinary skill in the art to correlate the User Ids and VLAN Ids since they are well-known attributes that are used to describe users, user devices and their respective LAN connections.

Fukutomi, Haggerty-Dobbins are analogous art because they present concepts and practices regarding secure multicasting using IGMP. At the time of the invention it would have been obvious to a person of ordinary skill in the networking art to combine Haggerty-Dobbins into Fukutomi. The motivation for said combination would have been to enable multicasting to a broad variety of LAN devices including those connected to VLANS (Haggerty-Column 25 Lines 45-60) while preventing non-authenticated receivers from receiving the multicast stream.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 2) a RADIUS+ protocol extended from a RADIUS (Remote Authentication Dial In User Service) protocol is adopted as communication protocol between the multicast router and the authentication

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server. (Fukutomi-Paragraph 117)

The motivation to combine described in Claim 1 applies to Claim 2.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 3) wherein the authentication server is an AAA (authorization and Authentication) server. (Fukutomi-Figure 9, *'authentication server'*)

The motivation to combine described in Claim 1 applies to Claim 3.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 5) wherein the multicast router in the system further for, after receiving an IGMP Leave message, (Haggerty-Column 31 Lines 50-65, *'switch leave group message'*) extracting the VLAN ID from the message, and obtaining corresponding entry in the multicast access privilege table via searching with the VLAN ID, then deleting the address of the multicast group indicated by the IGMP Leave message in the entry; (Haggerty-Figure 13, Column 30 Lines 10-35, *'unmap message for removing multicast connections'*)

after completing a routine disposal on leave messages of the host, generating a Leave message and sending to the Ethernet switch, which includes the VLAN ID of the host which wants to leave the multicast group, the address of multicast group where the

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host wants to leave and a Leave command field; (Haggerty-Figure 13,Column 30 Lines 10-35,'*unmap message for removing multicast connections*')

the Ethernet switch further for, after receiving the Leave message from the multicast router, obtaining the entry through looking up the forwarding table with the MAC address corresponding to the multicast address of the multicast group, and getting the port number of the host with the VLAN ID in the Leave message, and then deleting the said port number from said entry. (Haggerty-Figure 13,Column 30 Lines 10-35,'*unmap message for removing multicast connections*')

The Examiner notes that Claim 5 is directed towards a connection tear down process which is disclosed by Haggerty Column 23 Lines 55-60. It would have been obvious for a receiver host to generate a Leave message upon termination of multicast session as is well-known in multicasting protocols.

The motivation to combine described in Claim 1 applies to Claim 5.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 6) wherein the multicast router in the system further for, after knowing offline status of the host, (Haggerty-Column 29 Lines 40-55,'*detects no local receiving hosts*') actively generating the Leave message and sending to the Ethernet switch; moreover terminating the multicast flow transmission.

It would have been obvious to a switch upon determining that there are no more

receivers to generate a Leave message as is well-known in multicasting protocols.

The motivation to combine described in Claim 1 applies to Claim 6.

Claims 7-9,11 describe limitations previously described in Claims 1-3,5-6 thus they are rejected on the same basis as Claims 1-3,5-6.

The motivation to combine described in Claim 1 applies to Claims 7-9,11.

Claim 7 is rejected on the same basis as Claim 1.

Furthermore Fukutomi-Haggerty-Dobbins disclosed (re. Claim 7) a method for implement a controlled multicast, comprising: A. in advance, according to ports of an Ethernet switch, classifying vlan with one VLAN for each port, and linking one port to the host; (Fukutomi-Paragraph 48) making access authentication for a host which wants to join in a multicast group, (Fukutomi-Paragraph 48, *'authenticating based on the port of the PE router'*) if the authentication is successful, executing step B, otherwise ending; B. forwarding an IGMP Membership Report message from the host by the Ethernet switch; (Haggerty-Column 14 Lines 30-40) C. detecting whether to accept the host joining in the multicast group, if it is, generating a Join message (Haggerty-Column 8 Lines 35-45) to control establishing of an entry in a forwarding table of the Ethernet switch by a multicast router, and forwarding a multicast flow (Dobbins-Column 2 Lines

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50-65, Column 3 Lines 15-25) from the multicast router according to the current forwarding table by the Ethernet switch; otherwise ending.

Claim 18 is rejected on the same basis as Claim 7.

Furthermore (re. Claim 18) *if the port corresponding to the destination Media Access Control (MAC) address (Haggerty-Column 15 Lines 50-60, Column 17 Lines 5-15) in the IGMP Membership Report message is found in the forwarding table, forwarding to the found port.* (Dobbins-Column 2 Lines 50-65, Column 3 Lines 15-25)

The motivation to combine described in Claim 1 applies to Claim 18.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 8) forwarding an IGMP Leave message from the host by the Ethernet switch; generating a Leave message to control deleting the entry of the host in the forwarding table after the multicast router receives the IGMP Leave message. (Haggerty-Column 31 Lines 50-65)

The motivation to combine described in Claim 1 applies to Claim 8.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 9) actively generating the Leave message to control deleting the entry of the host in the forwarding table by the

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multicast router once knowing offline status of the host, and terminating the multicast flow transmission. (Haggerty-Column 31 Lines 50-65)

The motivation to combine described in Claim 1 applies to Claim 9.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 12) deleting the entry of the host in the forwarding table further comprises, if the deleted port is the solely port of the said entry in the forwarding table, further deleting the whole entry. (Haggerty-Column 24 Lines 30-45)

The motivation to combine described in Claim 1 applies to Claim 12.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 13) adopting a VLAN protocol between the multicast router port and the Ethernet switch. (Dobbins-Column 3 Lines 5-15)

The motivation to combine described in Claim 1 applies to Claim 13.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 14) filtering data messages send by a multicast sender (Haggerty-Column 21 Lines 45-65, '*filter connection*') with a multicast Access Control List (ACL) through the first receiver among the multicast

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routers, and forwarding the data messages that satisfy the requirements in the ACL to the multicast tree. (Fukutomi-Figure 2 , Paragraph 127, Paragraph 72, *'forwards a corresponding multicast stream to the port of the participation-accepted host'*)

The motivation to combine described in Claim 1 applies to Claim 14.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 15) wherein the multicast ACL comprises a command word, a source address and a group address. (Haggerty-Column 21 Lines 45-65, *'sender's message contains the group'*)

The motivation to combine described in Claim 1 applies to Claim 15.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 16) wherein the multicast ACL is distributed to each multicast router by a centralized multicast service control server; meanwhile the multicast service control server is also acts as the authentication server. (Fukutomi-Paragraph 127)

The motivation to combine described in Claim 1 applies to Claim 16.

Fukutomi-Haggerty-Dobbins disclosed (re. Claim 17) wherein the multicast ACL can also be distributed by a centralized policy server or a network manager. (Fukutomi-Paragraph 127)

The motivation to combine described in Claim 1 applies to Claim 17.

Conclusion

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Bengzon whose telephone number is (571) 272-3944. The examiner can normally be reached on Mon. thru Fri. 8 AM - 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on (571)272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Greg Bengzon/
Examiner, Art Unit 2444